

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSIONERS

In the Matter of:

)

Docket No. 72-22-ISFSI

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PRIVATE FUEL STORAGE, LLC

)

ASLBP No. 97-732-02-ISFSI

(Independent Spent Fuel

)

Storage Installation)

)

March 14, 2005

**STATE OF UTAH'S COMMENTS ON THE COMMISSIONERS' EFFECTIVENESS
REVIEW OF A LICENSE TO PRIVATE FUEL STORAGE**

The State of Utah comments on whether or not the Commission should direct issuance of an immediately effective license to Private Fuel Storage LLC ("PFS") under 10 C.F.R. § 2.764(c).¹ The Commission faces serious, unprecedented and unresolved safety and policy questions in determining whether to license a 4,000 cask spent nuclear fuel facility located on an Indian reservation about 45 miles from Salt Lake City. The Commission also faces making an ill-informed decision because license basis documents are so outdated that they no longer reflect the facility being proposed.

____To issue a license to PFS, not only must the Commission find that PFS meets statutory and regulatory requirements, but it must also make a specific finding under 10 C.F.R. § 72.40 (a) that the PFS site and facility meet enumerated safety and financial provisions, that the activities authorized by the license "can be conducted without endangering the health and safety of the public" and that "issuance of the license will not be inimical to the common defense and security." Id. § 72.40(a)(13) and (14). However, the Commission does not have a current and reliable licensing basis on which

¹Notably, this provision contains no standards; it merely says it is the Commission, not the Staff, who must authorize issuance of an initial off-site ISFSI license.

to make an immediately effective license decision.² The State has not seen and is unaware that the Commission has before it a draft license incorporating all license conditions, technical specifications, and other current provisions applicable to the PFS ISFSI. The PFS license application has not been updated since November 21, 2001 and the Staff last issued a supplement to its Safety Evaluation Report (SER) on December 21, 2001.³ In the intervening three plus years, the Board conducted hearings on seismic, hydrology, and rail spur alignment; two hearings on aircraft crashes; and rendered numerous other rulings. Significant changes to PFS's licensing basis and further license conditions stem from these hearings and rulings.⁴ Unless and until the proposed form of the license, the SER, the PFS Safety Analysis Report and other licensing documents have been tied down,⁵ the inadequate record before the Commissioners invites it to make an arbitrary and ill-

²See Florida Power & Light Co. (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 NRC 3, 8-9 (2001) ("When the Commission issues an initial license, it makes a comprehensive determination that the design, construction, and proposed operation of the facility satisfied the Commission's requirements and provided reasonable assurance of adequate protection to the public health and safety and common defense and security" and it has a "current licensing basis," consisting of "the license requirements, including license conditions and technical specifications . . . [and] the plant-specific design basis information documented in the plant's most recent Final Safety Analysis Report, and any orders, exemptions, and licensee commitments that are part of the docket for the plant's license." (*internal citations and quotations omitted*)).

³The SER assembles applicable license conditions; the application contains Technical Specifications and Commitment Resolutions but again all these documents are stale. For example, there is no record incorporating PFS's and the Staff's agreed-to conditions on the license in settlement of hydrology or PFS's unusual and novel design changes to the generic HI-STORM 100 cask. See 10 C.F.R. § 72.24; Contentions Utah O and TT settlements.

⁴For example, in the Aircraft Accident Consequences decision (Feb. 24, '05) the Board failed to make a necessary finding to sustain its decision – a critical part of PFS's analysis is totally dependent on the HI-STORM 100 (Rev. 0) casks modified with shims. See PFS's Dec. 9, 2003 RAI responses; Utah Contention TT; and Utah K Findings (Oct 28, '04) at 9-11 and Reconsideration Motion at 8-9.

⁵NRC licenses typically incorporate the license application and requires the licensee to abide by it.

informed decision and offers an unreliable basis for making required findings before authorizing initial license issuance.

In a post 9/11 world, the matter of security at the PFS facility raises heightened concerns regarding terrorism, security staffing,⁶ and local law enforcement response.⁷ The centralized and open nature of the PFS operation makes it a prime terrorist target. In rejecting Utah's contention on "suicide mission terrorism", the Commission said it would address terrorism generically. CLI-02-25, 56 NRC 340 (2002). To this end, the Commission has not proceeded through rulemaking but has issued various unpublished orders imposing additional security measures on licensees who may store spent fuel. The Commission has the discretion to address a matter either through rulemaking or adjudication,⁸ but by doing neither, it has deprived Utah of due process in the PFS licensing proceeding. Utah attempted to obtain access to details of an unpublished security order under safeguards conditions; its request was rejected as premature (PFS was not then a licensee) and potentially inapplicable (the interim security requirements may have changed by the time PFS obtained a license). LBP-03-05 slip op at 3-4. The Board noted, however (*citing to* 67 Fed. Reg. at 65,153-54), "the State would seemingly have the opportunity . . . to request a hearing" if security orders were eventually applied to the PFS facility. *Id.* at 4. Now is the time to apply security orders

⁶ PFS will not have a full complement of 24 hour security staffing. *See* Contention Utah Security A; and LBP-98-13, 47 NRC 360, 368 (1998).

⁷NRC has on record a letter from the Tooele County District Attorney advising that the county has no obligation to provide law enforcement protection to the PFS facility. *See* State of Utah's Motion to Amend Security Contentions (Dec. 17, '98) and Exh. 3 thereto.

⁸Fire Protection for Operating Nuclear Power Plants, CLI-81-11, 13 NRC 778, 800-01 (1980); Consumers Power Co. (Midland Plant, Units 1 and 2), LBP-82-118, 16 NRC 2034, 2038 (1982); NAACP v. Federal Power Comm., 425 U.S. 662, 668 (1976).

to the PFS facility.⁹ Utah again requests access to unpublished orders (under safeguards procedures) imposing security measures on facilities that store (or will in the near future store) spent nuclear fuel¹⁰ and to delay license issuance until Utah has been granted a hearing on whether those orders should now be imposed on PFS.

Utah urges the Commission to withhold license issuance until completion of a comprehensive review and resolution of the aircraft crash safety issues that are sui generis to the site selected by PFS. The location for the largest spent nuclear fuel storage facility in the nation lies directly below the flight path of over 7,000 annual sorties of single engine fighter jets en route to the adjacent military bombing range (the largest bombing and testing range in the continental United States). As a result of this location, the Board has endeavored to determine whether the proposed PFS facility must be designed to withstand an accidental F-16 crash or impact from ordnance carried by an F-16.

PFS advocated for an aircraft crash threshold standard ten times lower than that for nuclear power plants. In a decision of first impression, the Commission ruled in the PFS case that an accident is deemed a design basis event if the probability of that accident is at or greater than one in

⁹In a recently issued license to Foster Wheeler Environmental, for an ISFSI located on the 800 square mile federal installation, INEEL, Chairman Diaz agreed to the Staff's development of additional security measures and directed the Staff to consider the degree to which current DOE security measures and practices meet NRC's current security practices. *See* Comments on SECY-04-0199. Unlike the vast federally controlled compound at INEEL, the 4,000 cask PFS facility is on open range land, in plain view, and located near public roads. It is therefore imperative to attach security measures additional to those in Part 73 as a condition to any initial license issued to PFS, for if the Commission were to defer this decision until after license issuance, it would not satisfy itself of the findings it needs to make under 10 C.F.R. § 72.40. *See also* CLI-01-16, slip op. at 5 (Commission is willing to hold up the PFS license if revision of security regulations is imminent).

¹⁰To the extent necessary, by this document the State also makes service on the Executive Director of Operations to obtain access to such orders. *See* 10 C.F.R. § 2.744(a).

a million.¹¹ *See generally*, CLI-01-22, 54 NRC 265 (2001).

Following a lengthy hearing in 2002, the Licensing Board held that the probability of a fighter jet accidentally crashing into the PFS site was “over four times too high to permit licensing the facility.” PID at 3.¹² Neither an NRC licensing board nor the Commission has ever considered the complex issue of the probability that an aircraft impact into a spent fuel storage cask would release radiation because, as the Board speculated, “sites for which the probability was seen to be close were rejected by the applicant a priori.” *Id.* at A-10. Nonetheless, PFS elected in a second hearing to further litigate that probability.

In a two-to-one decision, the Board found that “an F-16 crashing at or below a particular rate of speed and angle of impact . . . would not damage a canister.” *Id.* at 6 (*emphasis omitted*). The majority found that the probability was “marginally” below the design basis threshold standard and it relied on postulated qualitative conservatisms for “comfort.” *Id.* at 7. However, the only Board panelist with formal engineering education and expertise, Dr. Lam, stated: “I dissent from the majority opinion for the basic reason that the proposed PFS facility has not been demonstrated to meet an established safety standard for accidental aircraft crash hazards.” *Id.* at D-1. Moreover, Dr. Lam found no “comfort” in the asserted qualitative conservatisms espoused by the majority; he remained troubled by the numerous uncertainties relied on in PFS’s analysis.¹³

¹¹Note, Commissioner Dicus did not join in the decision; she desired the Board make a factual determination whether risks from an ISFSI are more like those at a nuclear reactor or geologic repository operating areas. CLI-01 22, 54 NRC at 265.

¹²Final Partial Initial Decision (Regarding F-16 Aircraft Accident Consequences) (Feb. 24, 2005).

¹³Major uncertainties are a result of the small relevant F-16 crash data evidence, the quality and sensitivity of the regression analysis to expand the F-16 crash data, high impact loading, multi-axial strains, “the actual shape of the stress/strain curve, presences of residual stress, large strain gradients, presence of welds, potential fabrication and installation errors, and high strain rates,” PID at D-2 to -5; *see also* PID at Part B (majority).

As the Commission advised, credible accidents are called “design basis events” and if an event “does not exceed the design basis, engineered controls will keep any radiation exposure to the public within prescribed limits.” CLI-01-22, 54 NRC at 259. In LBP-03-4, the Board found the probability of an F-16 crash into the site to be a credible event. In the second hearing, the majority devised an incorrect legal standard by limiting the issue to “whether the canister [MPC] will, in a crash situation, maintain its integrity as a radiation boundary”, PID at B-2 (*public version*), and failed to consider the increase in radiation dose due to failure of the overpack’s radiation shielding, which is the primary shielding for the spent fuel. The majority found there was no more than a 0.86 in a million chance “of anything that would cause a radiological release” (*i.e.*, the release of radioactive byproducts contained in the MPC). PID at A-17. Thus, the majority found PFS prevailed only by limiting the probability assessment to the MPC, and neglected to consider the increase in radiation dose from loss of shielding due to damage to the overpack. This newly devised standard does not satisfy 10 C.F.R. § 72.106 (b). As Judge Lam said, “[t]he Applicant should demonstrate that a breached spent fuel storage cask would not result in a site boundary radioactive dose exceeding regulatory limits.” PID at D-7. *See* Utah Motion for Reconsideration (Mar. 7, ‘05).

The way in which the Board analyzed a critical component of the aircraft crash analysis – how to compute failure strain in the MPC – serves to point out the tenuous footing upon which the majority decision rests. First, the majority declined to apply the only published and comprehensive standard for the analysis of aircraft crashes, DOE-STD-3014-96 “Accident Analysis For Aircraft Crash into Hazardous Facilities” (Oct. 1996).¹⁴ Second, the NRC Staff does not permit failure

¹⁴Published by the U.S. Department of Energy and authored by representatives of three federal agencies and three national laboratories, with a panel of 33 supporting experts, the purpose statement of DOE-STD-3014-96 is: “This is an analytical standard intended to provide a sound, technically justifiable, and consistent approach to analyzing the risk posed by an aircraft crash into a

strains in the plastic range when licensing transportation casks. Reg. Guide 7.6, Rev. 1. The majority Board set an arbitrary failure strain in direct conflict with this NRC practice under, and other generally established engineering practices. Third, nothing in the record shows that the standard set by the Board is supported by any other governmental or privately sponsored aircraft crash studies.¹⁵

The State urges the Commission to withhold authorizing the issuance of a license to PFS until 1) the Board has ruled on the State's motion for reconsideration on cask breach, 2) the Commission has taken final agency action on any petitions for review of cask breach, and 3) the Commission has had an opportunity to complete a comprehensive review of aircraft crash studies to ensure that the standards and methodologies relied upon in the PFS matter are consistent with NRC and National Academy of Science aircraft studies and determinations.

The regulatory footing for the PFS facility has been systematically eroded by a continuing series of exemptions, exceptions, and relaxed safety standards. For example, two ASLB judges without engineering expertise rejected the extensive and only evaluation criteria of the United States Government, published specifically for aircraft crashes into nuclear facilities; it is a standard that the PFS facility failed to meet by a wide margin. Unable to comply seismic standards, PFS had to resort to an exemption from the regulations and devise a novel scheme of mixing cement with soil to buttress the storage pads from overturning during an earthquake. And, being incapable of facility containing radioactive or hazardous chemical materials." *Id.* at 6 (*emphasis added*).

In his dissent, Judge Lam stated: "I do not join in the majority's belief that the DOE ductility ratio standard is merely a design tool . . . However, even if the DOE ductility ratio . . . were merely a design failure strain, prudent safety practice . . . would still require preventing the strain in the overpack and the canister from greatly exceeding the ductility ratio failure strain." PID at D-5, n.9

¹⁵Utah was precluded from reviewing or assessing the consistency in methodology, failure standard, material strengths, or results obtained in NRC sponsored studies or investigations related to high impacts (*e.g.*, aircraft crash) into nuclear facilities. This information was also unavailable to the Board and, to the State's knowledge, to the Staff litigating contention Utah K.

demonstrating it will possess sufficient financial resources, the PFS consortium (which has no assets) relies on an unprecedented cash strapped financial scheme – a scheme NRC has failed to disclose.

The Commission must consider whether activities authorized by a license to PFS would endanger public health and safety and whether issuing PFS a license would be inimical to the common defense and security. Therefore, unlike a licensing board, the Commission can and should consider public policy when making its decision. An important consideration in licensing the PFS facility is that fuel shipments to this private facility will occur up to a decade before any fuel is shipped from reactors to a permanent repository. The significance of this fact is that transportation corridor states will not have received federal funding and training in emergency response for shipments under the Nuclear Waste Policy Act.¹⁶ Under the PFS proposal there will be the unprecedented annual movement of hundreds of casks containing nuclear fuel, thousands of miles across the country. All this massive shipping campaign has to rely upon for emergency response is, essentially, local fire fighters or highway patrol who are untrained in responding to nuclear accidents.

Added to the lack of emergency training, is the recently announced statement by the DOE's Director of the Office of National Transportation, that under the Standard Contract between DOE and owners of nuclear fuel, DOE has no obligation to collect fuel in sealed canisters; and it has no obligation to collect fuel at the PFS site. *See* Contention Utah UU. At the PFS site, the exclusive storage system is the HI-STORM 100 cask, which stores fuel in a sealed canister. The Commission contemplates that fuel stored inside the sealed canister will never be opened from the time it leaves the reactor until it is deposited into a permanent repository, and on this basis, in part, ruled that

¹⁶As a private shipper, PFS is not subject to the funding and training requirements that are applicable to DOE shipments. 42 U.S.C. § 10175(c). Any notion that PFS will train local emergency responders (LBP-05-5 slip op at n. 31), is pure speculation PFS has made no enforceable commitment, nor does it have the capacity, to provide such training.

there is no need for PFS to have a hot cell on-site to repackage fuel. CLI-04-22, slip op. at 6, 8.

However, the statement by the DOE official raises the real possibility that fuel will be unnecessarily transported across country back to a reactor for the major operational step of fuel repacking, and shipped across the country a third time for final disposal, thereby creating a dysfunctional spent fuel management system.

PFS's marketing, PFS's license application, NRC's Final EIS, and Commission rulings all laud the fact that there will be "seamless" movement of fuel from reactor to the PFS ISFSI, and then directly to ultimate repose. It is squarely within the Commission's power to address this issue that is too important to be ignored or left to the discretion of such arrangements that PFS and its customers are able, and choose, to make. One essential step the Commission can and must now take is to impose a license condition on PFS that it shall not accept any fuel unless and until each fuel owner has received written assurance from DOE (*e.g.*, by amending the Standard Contract) that DOE will collect fuel in sealed canisters and DOE will also collect fuel from the PFS site. *See also* LBP-05-05, slip op at 23-24.

There are many important questions the Commission must resolve prior to authorizing license issuance, such as: In the time of heightened military readiness, will a license to store 4,000 casks of nuclear fuel diminish the value of the largest military test and training range in the continental United States? Without an amendment to the Standard Contract, will the movement of 4,000 casks 2,000 miles across the country, without assurance they can be moved directly to a permanent repository, create a dysfunctional transportation system? Can the Commission assure itself that the lease between the Skull Valley Band of Goshutes and PFS will endure for the operational life of the

PFS facility, given the fractious state of tribal governance and leadership.¹⁷

PFS has chosen a site that is underlain by two earthquake faults, overflowed annually by 7,000 military fighter jets, on a reservation whose tribal governance is in turmoil, where its proposed ISFSI will be financed without PFS members contributing any equity. This (and not an obstructionist intervenor) has caused a lengthy licensing process. The unique legal, technical and safety questions and lack of reasonable assurance of safety (or at best marginal safety) call for reasoned deliberation by the Commission before it can decide whether it can make findings pursuant to 10 C.F.R. § 72.40 prior to authorizing license issuance. There are too many unresolved questions to proceed with haste. Furthermore, before PFS may proceed with construction, it must first obtain Department of Interior approval of the lease between PFS and the Band (which may require a supplemental EIS); it must also obtain right-of-ways across public lands from the Bureau of Land Management to complete its transportation plans. Accordingly, PFS could not commence construction solely on NRC's issuance of a license.

Utah requests permission to make an oral presentation to the Commission prior to any decision by the Commission on license authorization.

DATED this 14th day of March, 2005.

Respectfully submitted,

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¹⁷The federal criminal trial of disputed tribal chairman, Leon Bear on charges of tax evasion and stealing tribal funds, commences next month. The criminal trial of some other tribal members, who claim to be elected leaders, charged with illegally appropriating tribal funds, commences at the end of March.

CERTIFICATE OF SERVICE

I hereby certify that a copy of STATE OF UTAH'S COMMENTS ON THE COMMISSIONERS' EFFECTIVENESS REVIEW OF A LICENSE TO PRIVATE FUEL STORAGE was served on the persons listed below by electronic mail (unless otherwise noted) with conforming copies by United States mail first class, this 14th day of March, 2005:

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